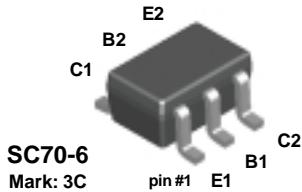


BC857S



NOTE: The pinouts are symmetrical; pin 1 and pin 4 are interchangeable. Units inside the carrier can be of either orientation and will not affect the functionality of the device.

PNP Multi-Chip General Purpose Amplifier

This device is designed for general purpose amplifier applications at collector currents to 200 mA. Sourced from Process 68.

Absolute Maximum Ratings*

$T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	45	V
V_{CES}	Collector-Base Voltage	50	V
V_{CBO}	Collector-Base Voltage	50	V
V_{EBO}	Emitter-Base Voltage	5.0	V
I_C	Collector Current - Continuous	200	mA
T_J, T_{stg}	Operating and Storage Junction Temperature Range	-55 to +150	°C

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
- 3) All voltages (V) and currents (A) are negative polarity for PNP transistors.

Thermal Characteristics

$T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Characteristic	Max	Units
		BC857S	
P_D	Total Device Dissipation Derate above 25°C	300 2.4	mW mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	415	°C/W

PNP Multi-Chip General Purpose Amplifier

(continued)

BC857S

Electrical Characteristics

$T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
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OFF CHARACTERISTICS

$V_{(\text{BR})\text{CEO}}$	Collector-Emitter Breakdown Voltage	$I_C = 10 \text{ mA}, I_B = 0$	45			V
$V_{(\text{BR})\text{CES}}$	Collector-Base Breakdown Voltage	$I_C = 10 \mu\text{A}, I_E = 0$	50			V
$V_{(\text{BR})\text{CBO}}$	Collector-Base Breakdown Voltage	$I_C = 10 \mu\text{A}, I_E = 0$	50			V
$V_{(\text{BR})\text{EBO}}$	Emitter-Base Breakdown Voltage	$I_E = 10 \mu\text{A}, I_C = 0$	5.0			V
I_{CBO}	Collector-Cutoff Current	$V_{\text{CB}} = 30 \text{ V}$ $V_{\text{CB}} = 30 \text{ V}, T_A = 150^\circ\text{C}$			15 4.0	nA μA

ON CHARACTERISTICS

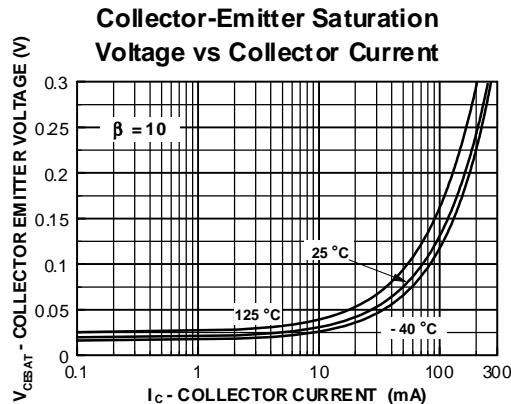
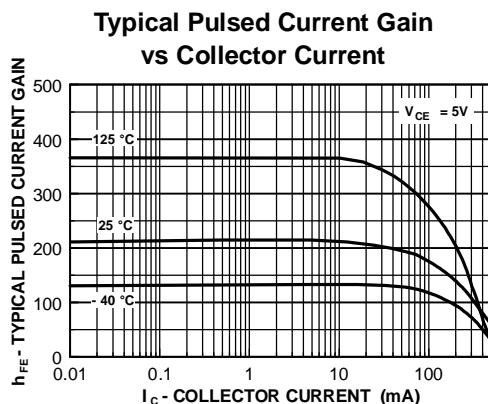
h_{FE}	DC Current Gain	$I_C = 2.0 \text{ mA}, V_{\text{CE}} = 5.0 \text{ V}$	125		630	
$V_{\text{CE}(\text{sat})}$	Collector-Emitter Saturation Voltage	$I_C = 10 \text{ mA}, I_B = 0.5 \text{ mA}$ $I_C = 100 \text{ mA}, I_B = 5.0 \text{ mA}$			0.3 0.65	V V
$V_{\text{BE}(\text{on})}$	Base-Emitter On Voltage	$I_C = 2.0 \text{ mA}, V_{\text{CE}} = 5.0 \text{ V}$ $I_C = 10 \text{ mA}, V_{\text{CE}} = 5.0 \text{ V}$	0.6		0.75 0.82	V V

SMALL SIGNAL CHARACTERISTICS

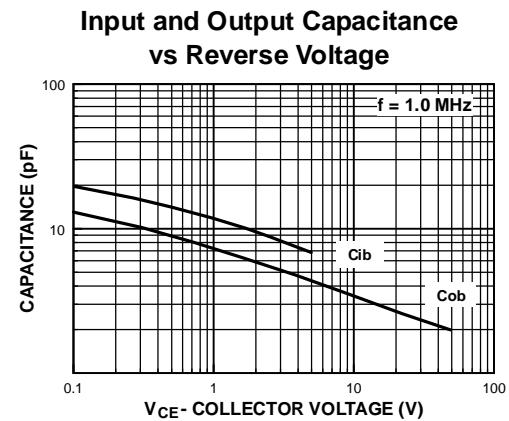
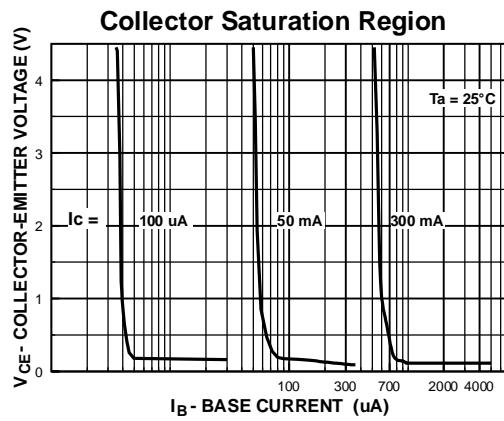
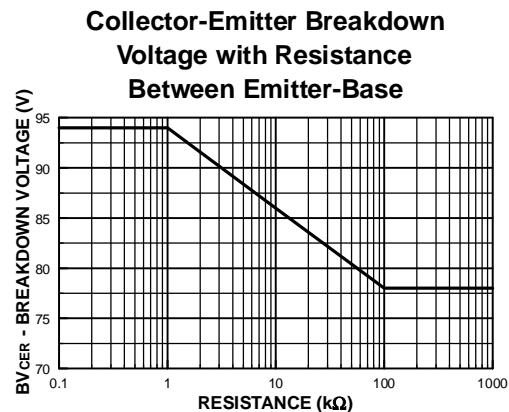
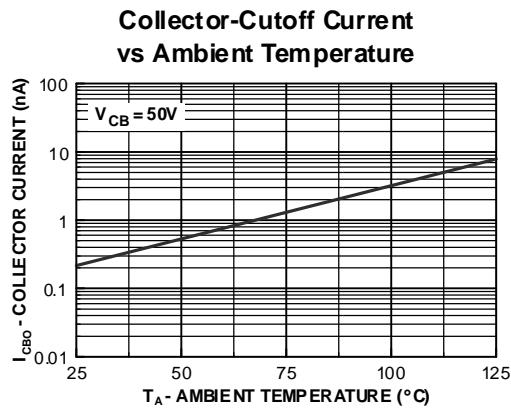
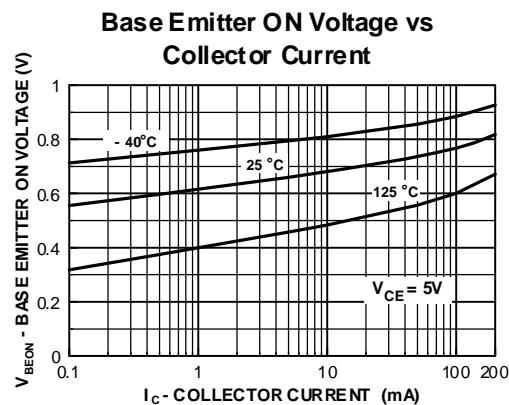
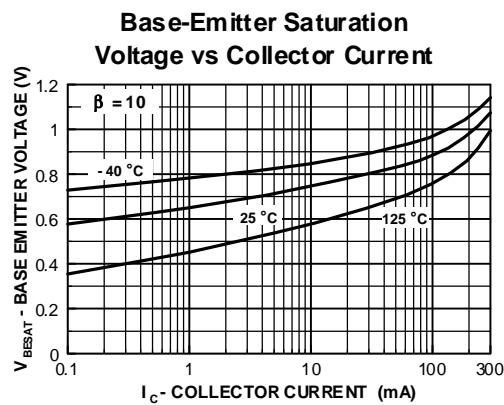
f_T	Current Gain - Bandwidth Product	$I_C = 10 \text{ mA}, V_{\text{CE}} = 5.0, f = 100 \text{ mHz}$		200		MHz
C_{obo}	Output Capacitance	$V_{\text{CB}} = 10 \text{ V}, f = 1.0 \text{ MHz}$		3.5		pF
NF	Noise Figure	$I_C = 0.2 \text{ mA}, V_{\text{CE}} = 5.0, R_S = 2.0 \text{ k}\Omega, f = 1.0 \text{ kHz}, \text{BW} = 200 \text{ Hz}$		2.5		dB

NOTE: All voltages (V) and currents (A) are negative polarity for PNP transistors.

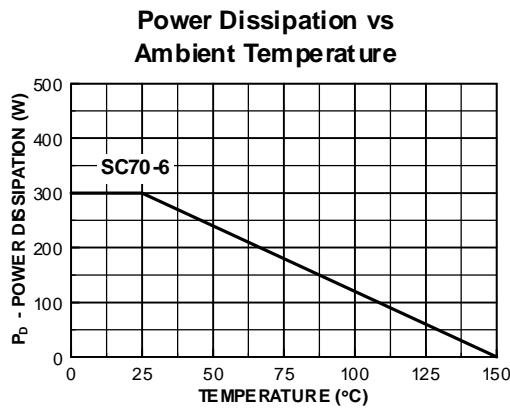
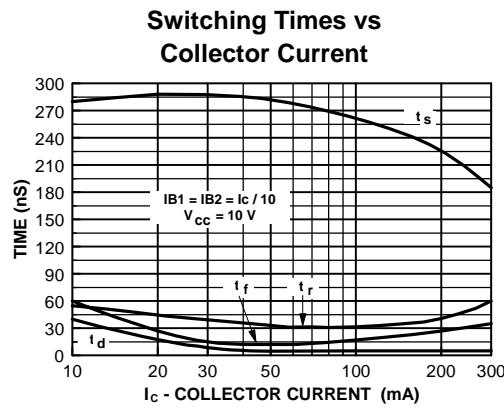
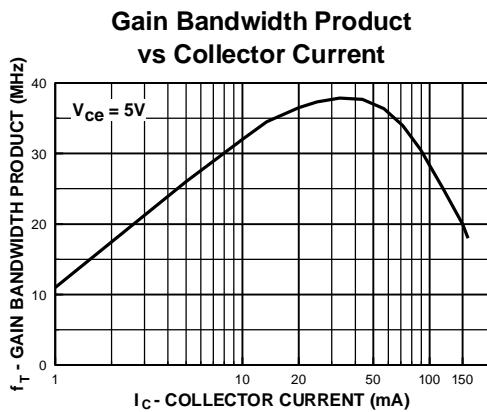
Typical Characteristics



Typical Characteristics (continued)



Typical Characteristics (continued)



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